WHAT IS CLAIMED IS:

1. A radiation detector comprising a housing, an elongated, rectangular crystal having four longitudinally extending corners, and a photomultiplier tube both supported in said housing, with a light pipe located axially between respective facing ends of the photomultiplier tube and the crystal; and a plurality of elongated rails extending along respective ones of said longitudinally extending corners of said rectangular crystal, establishing an air gap between said crystal and said housing.

2. The radiation detector comprising of claim 1 wherein each of said rails is lined on interior surfaces thereof with foam shock absorbing material.

3. The radiation detector of claim 2 wherein said rails are composed of low-friction plastic material.

4. The radiation detector of claim 1 wherein said rails extend along about 90% of a length dimension of said crystal.

5. The radiation detector of claim 1 wherein said rails are under compression in a direction substantially perpendicular to a longitudinal axis of said crystal.

6. The radiation detector of claim 1 wherein said housing is also rectangular, and at least one resilient member is located at one end of said crystal, axially between said housing and said crystal.

7. The radiation detector of claim 6 wherein said at least one resilient member comprises a spring.

8. The radiation detector of claim 1 wherein said photomultiplier tube is substantially square in cross section.

9. The radiation detector of claim 8 wherein said light pipe has a substantially square face interfacing with said photomultiplier tube and a substantially rectangular face interfacing with said crystal.

10. The radiation detector of claim 9 wherein said square face has a greater surface area than said rectangular face.

11. The radiation detector of claim 7 wherein compression plates are located on opposite axial sides of said at least one spring.

12. The radiation detector of claim 7 wherein said at least one spring comprises a pair of annular wave springs.

13. The radiation detector of claim 9 wherein a portion of said housing enclosing said crystal is substantially rectangular in cross section.

14. The radiation detector of claim 13 wherein a substantially cylindrical photomultiplier tube cover encloses said photomultiplier tube and is joined at one end thereof to said housing at respective flange portions.

15. The radiation detector of claim 14 and further comprising an electronics package secured to an opposite end of the photomultiplier tube, said electronic package including an annular flange, and an annular spring axially engaged between said annular flange and an opposite end of said photomultiplier tube cover.

16. A radiation detector comprising a rectangular housing, an elongated, rectangular crystal having four longitudinally extending corners supported and a photomultiplier tube supported in said housing with a light pipe axially supported between the photomultiplier tube and the crystal; and a plurality of elongated corner brackets extending along respective ones of said elongated corners of said rectangular crystal; wherein said photomultiplier tube is substantially square in cross section; and said light pipe having a substantially square face interfacing with said photomultiplier tube and a substantially rectangular face interfacing with said crystal.

17. The radiation detector comprising of claim 16 wherein each of said corner brackets is lined on interior surfaces thereof with foam shock absorbing material.

18. The radiation detector of claim 16 wherein said corner brackets are composed of low-friction plastic material.

19. The radiation detector of claim 16 wherein compression plates are located on opposite axial sides of said pair of annular wave springs.

20. The radiation detector of claim 16 wherein said photomultiplier tube is square and wherein a portion of said housing enclosing said photomultiplier tube is substantially round in cross section.

21. The radiation detector of claim 20 and further comprising an electronics package secured to an opposite end of the photomultiplier tube, said electronic package including an annular flange, and an annular wave spring axially engaged between said annular flange and an opposite end of said photomultiplier tube cover.

22. The radiation detector of claim 16 wherein said corner brackets extend along about 90% of a length dimension of said crystal.

23. The radiation detector of claim 16 wherein said corner brackets are under compression in a direction substantially perpendicular to a longitudinal axis of said crystal.

24. The radiation detector of claim 16 wherein said square face has a greater surface area than said rectangular face.

25. The radiation detector of claim 16 and further comprising a pair of annular wave springs located at one end of said crystal, axially between said housing and said crystal.

26. A radiation detector comprising a housing, an elongated, rectangular crystal having four longitudinally extending corners, and a photomultiplier tube both

supported in said housing, with a light pipe located axially between respective facing ends of the photomultiplier tube and the crystal; a plurality of rails including shock absorbing material extending along said crystal, creating a gap between the crystal and the housing, for protecting the crystal from radial shock and vibration; and a plurality of resilient members opposite ends of the crystal for protecting the crystal from axial shock and vibration.

27. A light pipe for coupling a scintillation crystal to a photomultiplier tube comprising a rectangular face for engaging a similarly-shaped face on the scintillation crystal and a square face for engaging a similarly-shaped photomultiplier tube.

28. The light pipe of claim 27 wherein said square face has a greater surface area than said rectangular face.